

Amendment under 37 C.F.R. § 1.111
U.S. Application No.: 09/987,671
Attorney Docket No.: Q67208

REMARKS

Applicants thank the Examiner for acknowledging the claim for foreign priority under 35 U.S.C. § 119, and for acknowledging receipt of the certified copy of the Japanese priority document.

Applicants also thank the Examiner for considering the references cited in the Information Disclosure Statement filed on November 15, 2001, as evidenced by the initialed Form PTO-1449.

Claims 1-4 are all the claims now pending in this application. Claims 2-4 are added by this Amendment and are supported by the present disclosure at page 8, lines 4-20, page 9, lines 15-20, page 11, lines 11-16, and Figs 2 and 3. No new matter is included.

The Examiner objects to Fig. 4 because it is not designated as –Prior Art–. Applicants are submitted proposed drawings corrections labeling Fig. 4 as –Prior Art—and respectfully request the Examiner to approve the drawing changes.

Reconsideration and allowance of the rejected claim are respectfully requested in view of the following remarks.

Claim Rejection under 35 U.S.C. § 112

Claim 1 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicants have amended this claim to overcome the rejection.

Claim Rejection under 35 U.S.C. §103

Claim 1 is also rejected under 35 U.S.C. 103(a) as being obvious over Alvesteffer et al. (6,125,695). Applicants respectfully traverse this rejection on the following basis.

Claim 1 recites, inter alia, “a bridge circuit having said first temperature detecting resistor and said second temperature detecting resistor electrically connected together therein, the bridge circuit being adapted to control a heating current of said heat generating resistor to maintain a constant temperature difference between said first temperature detecting resistor and said second temperature detecting resistor, wherein the flow rate within the fluid to be measured is detected by using the heating current, and wherein said bridge circuit receives a voltage that is proportional to the heating current of said heat generating resistor”.

Although Alvesteffer et al. discloses a flow sensor having a bridge circuit, Alvesteffer et al. is deficient because it does not disclose that the bridge circuit includes two temperature sensors that are electrically connected together. Rather, Alvesteffer et al. discloses a bridge circuit having a heater and an ambient temperature sensor electrically connected together (see Alvesteffer et al., col. 7, lines 25-34 and Figs. 3 and 4). As a result of the structure of Alvesteffer et al.’s device, the bridge circuit maintains a constant temperature difference between the first heater 24 and the first temperature sensor 38 (see Alvesteffer et al., col. 8, lines 63-65 and Figs. 3), rather than maintaining a constant temperature difference between the first temperature detecting resistor and a second temperature detecting resistor.

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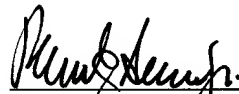
In view of the foregoing differences between claim 1 and the cited prior art, Applicants respectfully submit that the Examiner has failed to establish a prima facie case of obviousness based on Alvesteffer et al. Thus, claim 1 is believed to be allowable over this reference.

New claims 2-4 are added to further define the features of the invention taught at page 8, lines 4-20, page 9, lines 15-20, page 11, lines 11-16, and Figs 2 and 3 and are believed to be allowable in their present form.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The specification is changed as follows:

Page 2, first full paragraph:

It should be noted here that the bridge circuit is formed by the first temperature detecting resistor 3 for detecting the temperature of the intake air, the second temperature detecting resistor 5 disposed in the vicinity of the heat generating resistor 4 for detecting a temperature of generated heat, and the fixed resistor 9. A constant voltage is supplied to the bridge circuit from the constant voltage source 13. An output terminal of the bridge circuit is connected to an input terminal of the differential amplifier 16a. An output of the differential amplifier 16a is connected to the heat generating resistor 4 through the transistors ~~17a~~ 12a and ~~17b~~ 12b.

IN THE CLAIMS:

The claims are amended as follows:

1. (Amended) A thermosensitive flow rate detecting device comprising:
a heat generating resistor, provided in fluid to be measured, for generating heat by electric power consumed in accordance with a flow rate of the fluid to be measured;
a first temperature detecting resistor, provided in the fluid to be measured and positioned at a location that is substantially not in fluid communication with the heat generating resistor, for

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detecting a temperature of the fluid to be measured, wherein the fluid temperature which changes
in accordance with the flow rate; ~~and~~

a second temperature detecting resistor, provided in fluid communication with the heat
generating resistor, for detecting the temperature of said heat generating resistor, and

~~further comprising a bridge circuit provided with having~~ said first temperature detecting
resistor and said second temperature detecting resistor electrically connected together therein, the
bridge circuit being adapted to control a heating current of said heat generating resistor being
~~controlled such that to maintain a constant~~ temperature difference between said first temperature
detecting resistor and said second temperature detecting resistor ~~is kept constant, and wherein the~~
flow rate within the fluid to be measured ~~being is~~ detected by using the heating current, and

wherein said bridge circuit receives a voltage in proportion that is proportional to the
heating current of said heat generating resistor ~~is applied to said bridge circuit~~.

Claims 2-4 are added as new claims.